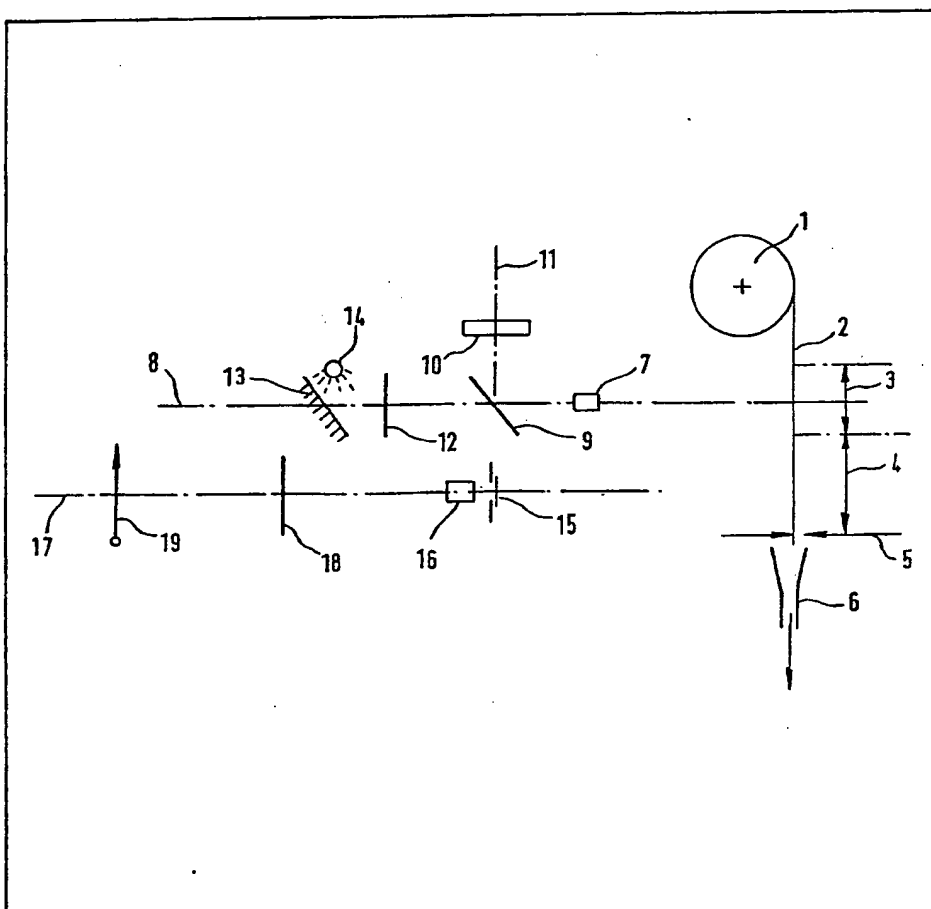


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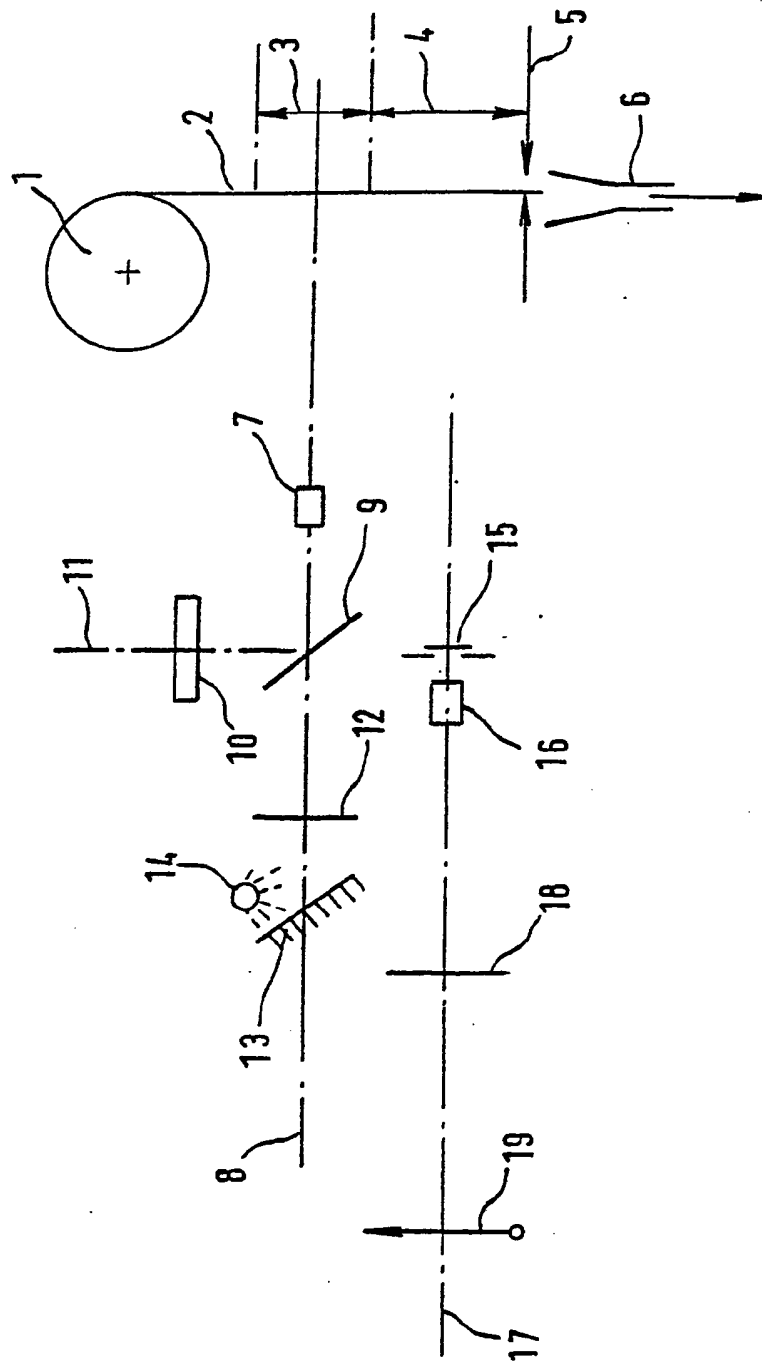
(54) Ticket dispenser

(57) A ticket dispensing apparatus comprises a camera 1, 2, 7, 9, 15, 16, 18 for simultaneously photographing a person 19 to whom a pass is to be issued and two displays 10 located in the field of the camera. The first display indicates the date and/or time of issue whereas the second display indicates the date and/or time or expiry. A token receiving and identification device is connected to a processing circuit which modifies the expiry date and/or time according to the value of the inserted token.



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SPECIFICATION

Ticket dispenser

5 The present invention relates to a ticket dispenser and is particularly but not exclusively applicable for dispensing a pass for a ski resort.

According to the invention there is provided a ticket dispensing apparatus comprising a camera for
10 photographing a person to whom a pass is to be issued and first and second data displays within the field of the camera, the first display indicating the time and/or date of issue and the second display indicating the time and/or date of expiry, the first and
15 second displays being recorded by the camera on a photographic record simultaneously with the image of the person to whom the pass is to be issued, the apparatus further comprising a token receiving and identification device connected to a processing circuit
20 arranged to modify the current time and/or date information by an amount dependent on the value of an inserted token in order to set the value of the time and/or date indicating the expiry time and/or date.

Preferably, the tokens are in the form of a card
25 with a magnetic band recorded thereon, the magnetically recorded data being indicative of the value of the token.

Conveniently, the token receiving device is operative to read the magnetically recorded data and, after
30 reading to erase the information and/or destroy the token thereby to prevent further use of used tokens.

It will be appreciated that any token or card, the value of which can be read magnetically can be forged by any device capable of recording the read
35 data. In order to prevent counterfeit tokens from being re-produced, it is possible to employ as the magnetic layer one which has a pre-set magnetization which is not capable of being erased. This is analogous to the use of paper marked with a water
40 mark in the production of currency. If a magnetically unerasable code is incorporated in each token, then re-reading of the token after erasing has taken place will indicate whether a token is genuine or counterfeit. Such counterfeit protection may readily be
45 incorporated by using two magnetic heads separated by, for example, an erasing permanent magnet.

The apparatus for taking a photograph of the person to be issued with a pass may be similar to a
50 conventional photographic booth and need not therefore be described in detail within the context of this Application. It is however, preferred to employ a fast photographic process in order to reduce the time taken to dispense a pass. Conveniently, therefore, the camera may be designed to use an instant
55 development film such as the SX70 Polaroid dry film.

The design of the apparatus of the invention enables a person taking a skiing holiday to buy in
60 advance a token valid for a given period of skiing. The token will remain indefinitely valid and the period which has been purchased can be made to

commence at any desired time by inserting the token into the pass dispenser described above. As of that
65 time, the token will be replaced by a pass identifying the person for whom the pass is valid and also indicating both the issue and the expiry date.

In addition to the photograph and the times and/or date indicating the period of validity, the pass may
70 include a fixed field of data indicating, for example, conditions of use of the pass. Of course, the pass need not necessarily be for skiing but may be used for an activity, for example, as a bus pass.

The invention will be further described, by way of
75 example with reference to the accompanying drawing, which shows schematically part of a ticket dispensing apparatus constituting a preferred embodiment of the present invention.

The part of the apparatus shown in the accompanying drawing comprises a camera and three data
80 displays. The camera comprises a film spool 1 carrying a roll of unexposed photographic film. The film is guided and moved by means (not shown) along an image plane indicated at 2 through an information exposure region 3 and a subject exposure region 4.
85 A guillotine 5 is provided at the end of the subject exposure region and cooperates with the drive means to cut off each length of previously exposed film, which then passes through a chute 6 to a film
90 processing arrangement (not shown) for developing the film, for instance by a fast process using either wet or dry techniques.

The camera includes a first lens 7 having an optical axis 8 and arranged to form an image in the information exposure region 3 of the image plane 2. A beam
95 splitter 9 is arranged in front of the first lens 7 and combines light from the three displays and directs this through the lens 7.

The first and second displays comprise a decoded
100 light emitting diode display 10 disposed along an axis 11 extending perpendicularly to the optical axis 8 of the first lens 7 so that light from the light emitting display is reflected by the beam splitter 9 into the first lens 10. The first and second displays comprise numerals indicating the time and/or date of
105 issue and of expiry, respectively, of a ticket to be issued by the apparatus. The first and second displays are connected to a processing circuit (not shown) which is connected to a token receiving and identification device (not shown).

The beam splitter 9 permits transmission along the optical axis 8 of light from a static display 12. The static display 12 is black-illuminated by means of a mirror 13 and a source of illumination 14. In particular, the display comprises opaque and transparent or
115 translucent regions representing information which is to be present on every ticket issued. Such information may, for instance, include details of the rules of issue of the ticket. The beam splitter 9, the first and second displays 10 and the third display 12 are
120 arranged so that the first lens 7 forms an image of the various displays in a desired juxtaposition on the film at the information exposure region 3.

The camera further comprises a shutter 15 in front

of which is located a second lens 16 having an optical axis 17. A reversing mirror 18 is located in front of the second lens 16 and a subject 19 to be photographed is located in front of the mirror 18. In particular, the camera and other parts of the ticket dispensing apparatus are located within a kiosk or booth provided with a window in front of which a subject to be issued with the ticket stands so that the subject 19 is outside the kiosk. The kiosk includes a light-tight enclosure for the three displays and associated optical devices.

In use, an unexposed region of the film is moved from the spool 1 into the image plane 2 to occupy the information and subject exposure regions 3 and 4.

When a ticket is to be issued, the subject inserts a token which has previously been bought and which carries data concerning its value into the token receiving an identification device, which reads the information from the token. The information normally comprises a representation of the value of the token, possibly with other information to permit identification and validation of the token. For instance, the information may be stored magnetically in a magnetic strip on the token which is read by one or more magnetic heads in the token receiving and identification device. The information may be recorded in un-erasable form on the token and the token receiving and identification device may be provided with two magnetic reading heads separated by magnetic erasing means, such as a permanent magnet. Thus, the magnetically encoded information from the token will only be read by both magnetic heads provided the information is recorded in un-erasable form. This greatly increases the security of the apparatus against attempts to present counterfeit tokens.

When an authentic token has been presented, information derived from the token receiving and identification device is passed to the processing circuit, which decodes the information concerning the value of the token. This information is processed and the second display of the light emitting diode display 10 is arranged to indicate the date and/or time at which the ticket is to expire by adding the amount of time bought by the token to the date and/or time of issue, which the first display is arranged to indicate. The apparatus is then arranged to inform the subject to stand in the correct position in front of the second lens 16 and the reversing mirror 18 and, after an appropriate delay, the shutter 15 is actuated so as to expose the subject exposure region 4 of the film with an image of the subject 19. Simultaneously with actuation of the shutter 15, the light-emitting diode display 10 is illuminated and the means of illumination 14 is operated so that the information exposure region 3 is simultaneously exposed with images of the three displays.

After exposure of the film, the film is advanced so that the exposed region lies immediately below the level of the guillotine 5 with a fresh un-exposed part of the film lying in the regions 3 and 4. The guillotine 5 is then operated to cut off the exposed portion of the film, which passes through the chute 6 to the developing and/or printing process. As mentioned previously, this is normally a fast photographic process

in order to reduce the time taken to dispense the ticket. Once the process has been completed, the ticket is dispensed via a further chute (not shown) to the subject.

70 CLAIMS

1. A ticket dispensing apparatus comprising a camera for photographing a person to whom a pass is to be issued and first and second data displays within the field of the camera, the first display indicating the time and/or date of expiry, the first and second displays being recorded by the camera on a photographic record simultaneously with the image of the person to whom the pass is to be issued, the apparatus further comprising a token receiving and identification device connected to a processing circuit arranged to modify the current time and/or date information by an amount dependent on the value of an inserted token in order to set the value of the time and/or date indicating the expiry time and/or date.

2. An apparatus as claimed in claim 1, in which the token receiving and identification device is arranged to read tokens in the form of cards, each having data indicative of the value of the token magnetically recorded in a magnetic band on the card.

3. An apparatus as claimed in claim 2, in which the token receiving and identification device is arranged to read the magnetically recorded data and, after reading, to erase the information and/or destroy the token so as to prevent further use of used tokens.

4. An apparatus as claimed in claim 2, in which the data indicative of the value of the token is recorded in a magnetic layer of pre-set magnetization which is not capable of being erased, and the token receiving and identification device is arranged to perform an erasing operation followed by a re-reading operation in order to check the authenticity of the token.

5. An apparatus as claimed in claim 4, in which the token receiving and identification device includes two magnetic reading heads separated by an erasing permanent magnet.

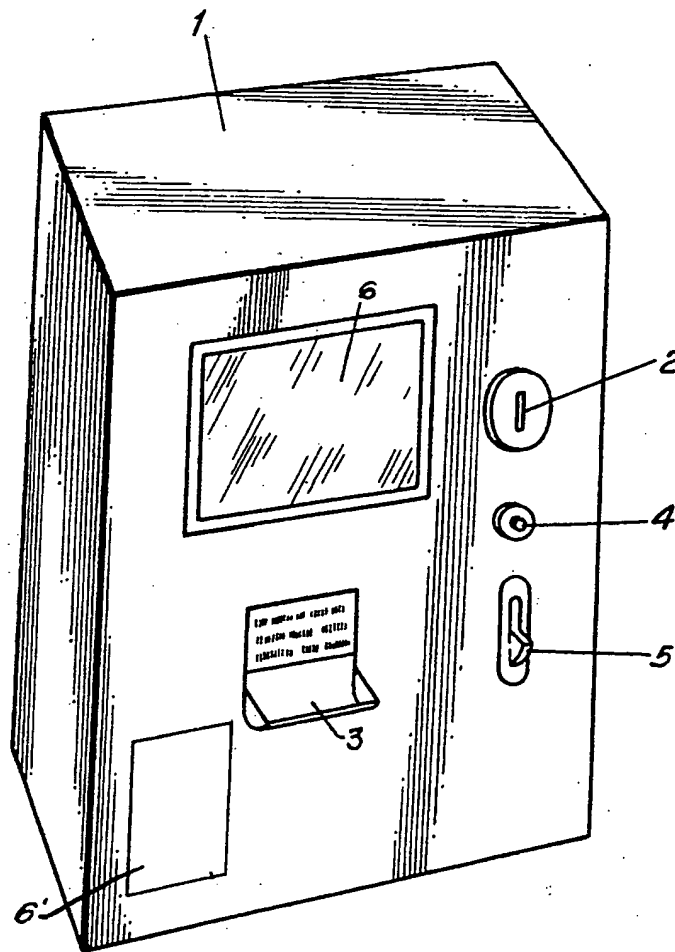
6. An apparatus as claimed in any one of the preceding claims, in which a third data display carrying fixed data is located within the field of the camera.

7. A ticket dispensing apparatus substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing.

May 9, 1967

S. G. KLEIN
METHOD FOR AUTOMATICALLY PREPARING, RECORDING AND
DELIVERING IDENTIFICATION TICKETS
Filed March 23, 1965

3,318,428



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3,318,428

METHOD FOR AUTOMATICALLY PREPARING RECORDING AND DELIVERING IDENTIFICATION TICKETS

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1 Claim. (Cl. 194-2)

The present invention relates to a method for automatically delivering tickets and to an apparatus for carrying out the method.

Certain kinds of tickets are known, which are only valid for a single occasion and are issued only to one certain person, i.e. they are not transferable. Such tickets are provided, for example, for ski lifts, sports meetings, single day and period journey insurance, and tickets which can be drawn at railway stations upon payment of the appropriate fee.

In order to prevent the transfer to another person of a ticket intended only for the personal use of the owner, it was formerly necessary to prescribe the filling in of certain forms, possibly requiring the photograph of the owner of the ticket. The filling in of such forms is much too time-consuming under conditions of crowding and the requirement of submitting a photograph with the filled up form has the effect of inhibiting sales.

The purpose of the present invention is to avoid these disadvantages.

The method for automatically issuing tickets which is the subject of the present invention is characterised by the feature that the insertion of a prescribed amount of money into an automatic apparatus has the effect of initiating and controlling a series of operations which takes place in a definite sequence for the purpose of applying an identifying characteristic both to a ticket which is to be delivered as well as to a record carrier which remains in the automatic apparatus, and also results in the delivery of the ticket provided with the said identifying characteristic.

The apparatus serving to carry out the method is characterised by the fact that it comprises means for the insertion of coins, a supply of tickets to be delivered, means for impressing an identifying characteristic both upon a ticket to be delivered as well as upon a record of the same, ticket delivery means, a money returning button, money returning means, and control and operating means in electrical-mechanical operative connection with each other.

In the performance of the method according to the invention, after the insertion of the prescribed amount of money into the automatic apparatus, there follows the transfer of an identifying characteristic both upon a ticket which is to be delivered as well as upon a reproducible record, for example a copy, which remains in the automatic apparatus. The operations which are initiated and controlled as a result of inserting the amount of money proceed in a definite sequence and, in fact, these are so controlled that the delivery of the ticket only takes place after the money has been inserted in the automatic apparatus and after the transference of the identifying characteristic has taken place which imparts to the ticket a personal quality.

The transference of the identification characteristic on the ticket to be delivered and upon the reproducible record which remains in the automatic apparatus can be effected by arranging that the person, for whom the ticket is destined, makes a finger impression both upon the ticket as well as upon the copy thereof. For such finger impressions it suffices to use a conventional fingerprint tape. Instead of using a finger impression it is possible to use a photograph as an identifying character-

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istic. This photograph is prepared within the minimum of time by the automatic apparatus in the course of the operations which follow the definite sequence, and such photographs can, in fact, be prepared in duplicate copies, for example, of which one impression is applied to the ticket whilst the other impression remains with the copy of the ticket as a record in the apparatus. Particularly suitable for the rapid recording of the photographs is the camera which is available in commerce under the protected Trade Mark "Polaroid," which operates fully automatically and delivers finished pictures within a few seconds. The film which remains in the apparatus, which can be a so-called micro-film, can itself serve as the reproducible record, so that special means for reproduction of the photograph are not necessary.

In the accompanying drawing there is represented in perspective an apparatus for carrying out the method in accordance with the invention and using such a camera.

The apparatus indicated by the reference 1 has the appearance of a conventional automatic apparatus such as is used, for example, for issuing railway platform tickets and comprises means for the insertion of coins 2, ticket delivery means 3, a money return button 4 and a money return receptacle 5. Additionally the apparatus is provided with a window 6, behind which is situated a camera for taking the photographs. Inside the apparatus there are situated the control and operating means well-known in the art of automatic apparatus, such means being in electric-mechanical operative connection with each other in such a way that the intended sequence of the desired working operations is maintained.

In the drawing there is shown in the lower left corner of the apparatus the aperture 6' for taking finger or thumb impressions. Behind this opening are situated the conventional assemblies of apparatus for dactyloscopy comprising the color carrier, the printing ribbon and the like for taking the impression of finger prints.

It is possible to arrange a plurality of windows 6 or finger openings 6', so that each of these openings serves for the delivery of a certain definite category of tickets, which fix, for example, the period of validity, the points of entry, the amounts prescribed for travel insurance and so on.

By virtue of the method in accordance with the invention and the apparatus adapted for the performance thereof it is now possible to deliver tickets even under conditions of serious congestion without entailing the time-consuming filling up of forms, and such tickets are impossible to transfer to another person on account of the identification characteristic. Managements and insurance institutes have absolute protection against mischievous use of delivered tickets. For travel and insurance offices there is also the further advantage, in particular when photographs are used as the identification characteristic, that if a traffic mishap should take place, for example an aircraft crash, identification is substantially facilitated by the duplicate tickets retained in the ticket issuing apparatus and containing the photographs.

It is also possible to use only numbers for identification purposes, for example to apply numbers directly to the tickets when issuing them and to apply corresponding numbers to a recording strip which remains in the automatic apparatus. The entire operation is thereby considerably simplified, but this particular application is restricted to fields where there can be less stringent precautions against misuse.

For certain cases the preparation of a written copy remaining in the automatic apparatus is not absolutely necessary, and, for the purpose of identification and control of the tickets, it would be appropriate to set into operation a known type of recording mechanism which is adequate for the purposes of a reproducible record.

The numbers which are used for identification purposes may be prepared in advance for application to the tickets and films which are used. The tickets with the photographs or finger impressions for identification purposes can be prepared partly or wholly of known types of reproduction paper.

The operation of the described apparatus may be effected by purely mechanical means, whether it be by push buttons, drawers, cranks and so on, and naturally can also be effected wholly or partly by electrical means in a similar manner to the automatic goods dispensers which are set into operation by the insertion of a coin.

While the invention has been described in detail with respect to a now preferred example and embodiment of the invention it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended, therefore, to cover all such changes and modifications in the appended claim.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

In a method for automatically preparing, recording and delivering identification tickets from an issuing machine, wherein upon insertion of a prescribed amount of money into said machine, operations are initiated and controlled in a definite sequence, the steps of

- (a) bringing for access before the person to whom said ticket is to be issued from said machine both said ticket which is to be issued and a duplicate record thereof which is retained within the machine;
- (b) receiving positive, color-impressed finger prints of said person, said prints being made with the same fingerprinted color material, and identical prints being placed separately on said ticket and said record; and
- (c) issuing said finger-printed ticket to said person while simultaneously, within said machine, rendering said duplicate finger printed record inaccessible to said person.

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